position relative to the hinge plate and the housing. Also, one or more retainer members may maintain the hinge plates in a closed position relative to the housing, e.g., in a position close to the housing, and/or maintain the hinge plates in an open position away from the housing.

[0007] In one embodiment, at least one of the doors may include a container holder that is movable between a folded position and an extended position in which the container holder is arranged to support a container, such as reagent supply container. In addition, or alternately, one or both of the doors may include a hook to support a control interface for the hemodialysis unit, such as a remote interface unit that is connected to the housing by a communication cable. These features may make use of the dialysis unit easier by supporting components in a convenient location.

[0008] In another embodiment, the front panel may include at least one flanged portion to support blood lines of a blood circuit assembly. For example, the front panel may include several flanged sections arranged at a periphery of the front panel, such as at lower corners and at a top edge of the front panel. Blood circuit lines that connect to a patient may be relatively long (e.g., up to 3-4 feet or more), and may be wrapped around the periphery of the front panel and retained in place by the flanged portions. The flanged portions may be arranged to support the blood lines and allow the doors to be moved to the closed position without contacting the blood lines, e.g., to avoid pinching of the blood lines at door hinge points.

[0009] In one embodiment, the blood circuit connections at the front panel include arterial and venous blood line connectors for the blood circuit, and the dialysate fluidic connections at the front panel include a connection point for a reagent supply, dialyzer dialysate connections, and a blood line connection point for connecting the arterial and venous blood lines to a directing circuit of the dialysis unit.

[0010] The hemodialysis unit may include a control interface that is connected to the housing by a flexible cable and that is arranged to allow a user to receive information from and provide information to the hemodialysis unit. In one embodiment, the enclosure may include a control interface mounting area at a top of the enclosure where the control interface is mountable. For example, the control interface may include a foldable leg or other support that permits the control interface to be stood in a near vertical orientation on the top of the housing.

[0011] In another embodiment, the enclosure may include an electronics section that is separated and insulated from a disinfection section that is heated to disinfect components of the hemodialysis unit. For example, the disinfection section may include all of the liquid circuit components, such as valves, pumps, conduits, etc., of the various portions of the dialysis unit. The electronics section may include motors, computers or other data processing devices, computer memory, and/or other temperature sensitive electronics or other components. By isolating the electronics section from the disinfection section (at least to some degree), components in the electronics section may be spared exposure to the heat or other environmental conditions in the disinfection section whether during a disinfection operation or otherwise.

[0012] In another aspect of the invention, a portable hemodialysis system may be arranged so that power for the fluid circuit pumps of a dialysis unit may be provided by a modular power unit, e.g., a unit that can be selectively connected to or disconnected from the dialysis unit. As a result, failure of a power unit need not necessarily disable the entire dialysis system. Instead, the power unit may be replaced with another power unit, allowing for treatment to continue. For example, a modular assembly for a portable hemodialysis system may include a dialysis unit, e.g., including a housing that contains suitable components for performing hemodialysis, such as a dialyzer, one or more pumps to circulate blood through the dialyzer, a source of dialysate, and one or more pumps to circulate the dialysate through the dialyzer. The housing may have a front panel at which blood circuit connections and dialysate fluidic connections are located, e.g., where an operator may make patient blood access connections, connect a reagent supply, and/or connect a dialyzer. The modular assembly may also include a power unit having a housing that contains suitable components for providing operating power to the pumps of the dialysis unit. The power unit may be selectively connected to the dialysis unit and provide power to the dialysis unit for the pumps when connected to the dialysis unit, but may be incapable of providing power to the dialysis unit when disconnected from the dialysis unit. The power unit may be selectively connected to and disconnected from the dialysis unit by operation of a single handle, e.g., an operator may turn or otherwise operate a single handle to disconnect the power unit from the dialysis unit. In one embodiment, the dialysis unit and the power unit are sized and weighted to each be carried by hand by a human.

[0013] In one embodiment, the pumps of the dialysis unit are pneumatic pumps and the power unit provides pneumatic power to the dialysis unit. For example, the power unit may provide air pressure and/or vacuum to the dialysis unit to power the pumps. The power unit may include one or more air pressure pumps and/or air vacuum pumps, and the dialysis unit may include a plurality of valves to control application of pneumatic power to the pumps. To aid with use of the hemodialysis system in the home, the power unit and dialysis unit electrical power requirements may be provided by standard residential electrical power, e.g., approximately 110V, 15 amp electrical power. The dialysis unit may provide electrical power to the power unit, and the power unit may use the electrical power to generate operating power for the pumps.

[0014] In another aspect of the invention, a blood circuit assembly for a dialysis unit may be arranged to allow the replacement of most or all blood circuit components in a single operation. For example, the blood circuit assembly may include an organizing tray, a pair of pneumatic pumps mounted to the organizing tray for circulating blood received from a patient through a circuit including a dialyzer unit and returned to the patient, an air trap mounted to the organizing tray arranged to remove air from blood circulating in the circuit, a pair of dialyzer connections arranged to connect to the inlet and outlet of a dialyzer unit, and a pair of blood line connectors, one inlet blood line connector for receiving blood from the patient and providing blood to the pneumatic pumps and the other outlet blood line connector for returning blood to the patient.

[0015] In one embodiment, an anticoagulant connection is provided for engaging with an anticoagulant source and providing anticoagulant into the blood circuit. For example, the anticoagulant connection may include a pump for pumping anticoagulant from the anticoagulant source, such as heparin from a vial of heparin, to the circuit. The antico-